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1 55. The method of clam 54 wherein detecting the neural activity
2 comprises taking functional MRI images of the brain and monitoring neural activity at
3 the second location.

1 56. The method of claim 50 wherein the neural-function controls
2 learning a task and the neural activity related to the neural function is expected to
3 occur at the first location of the brain according to a known functional organization of
4 the brain, and wherein identifying the stimulation site comprises detecting a change in
5 the neural activity at the first location of the brain while the patient learns the task.

1 57. The method of clam 56 wherein detecting a change in the neural
2 activity comprises taking functional MRI images of the brain while the patient learns
3 the task.

1 58. The method of claim 50 wherein the neural-function controls
2 learning a task and the neural activity related to the neural function is expected to
3 occur at the first location of the brain according to a known functional organization of
4 the brain, and wherein identifying the stimulation site comprises detecting a change in
5 the neural activity at a second location different than the first location of the brain
6 while the patient learns the task.

1 59. The method of clam 58 wherein detecting a change in the neural
2 activity comprises taking functional MRI images of the brain while the patient learns
3 the task.

1 60. The method of claim 50 wherein the first region of the brain is
2 affected by a disease and neural activity related to the neural-function is expected to
3 occur at the first location of the brain according to a known functional organization of

4 the brain, and wherein identifying the stimulation site comprises detecting a change in
5 neural activity adjacent to the first region.

1 61. The method of claim 50 wherein the first region of the brain is
2 affected by a disease and neural activity related to the neural-function is expected to
3 occur at the first location of the brain according to a known functional organization of
4 the brain, and wherein identifying the stimulation site comprises detecting a change in
5 neural activity related to the neural-function at a second location different than the first
6 location.

1 62. The method of claim 50 wherein the first region of the brain is
2 affected by brain damage and neural activity related to the neural-function is expected
3 to occur at the first location of the brain according to a known functional organization
4 of the brain, and wherein identifying the stimulation site comprises detecting a change
5 in neural activity adjacent to the first region.

1 63. The method of claim 50 wherein the first region of the brain is
2 affected by brain damage and neural activity related to the neural-function is expected
3 to occur at the first location of the brain according to a known functional organization
4 of the brain, and wherein identifying the stimulation site comprises detecting a change
5 in neural activity related to the neural-function at a second location different than the
6 first location.

1 64. The method of claim 50 wherein applying the electrical potential
2 comprises inducing an increase in a resting membrane potential of neurons subject to
3 the electrical potential.

1 65. The method of claim 64 wherein applying an electrical
2 stimulation comprises providing an electrical potential between the first and second

3 electrodes that increases the resting membrane potential of a desired population of
4 neurons at the stimulation site by 10%-95% of a voltage gap between the resting
5 membrane potential and an action potential for the desired population of neurons.

1 66. The method of claim 64 wherein applying an electrical
2 stimulation comprises providing an electrical potential between the first and second
3 electrodes that increases the resting membrane potential of a desired population of
4 neurons at the stimulation site by 10%-95% of a voltage gap between the resting
5 membrane potential and an action potential for the desired population of neurons, and
6 wherein the electrical potential is provided at a frequency of approximately 40-200 Hz.

1 67. The method of claim 64 wherein applying an electrical
2 stimulation comprises providing an electrical potential between the first and second
3 electrodes that increases the resting membrane potential of a desired population of
4 neurons at the stimulation site by 10%-95% of a voltage gap between the resting
5 membrane potential and an action potential for the desired population of neurons, and
6 wherein the electrical potential is provided at a frequency of approximately 40-200 Hz
7 and a pulse width of approximately 20-100 μ s.

1 68. The method of claim 64 wherein applying an electrical
2 stimulation comprises providing an electrical potential between the first and second
3 electrodes that increases the resting membrane potential of a desired population of
4 neurons at the stimulation site by 60%-80% of a voltage gap between the resting
5 membrane potential and an action potential for the desired population of neurons.

1 69. The method of claim 64 wherein applying an electrical
2 stimulation comprises providing an electrical potential between the first and second
3 electrodes that increases the resting membrane potential of a desired population of
4 neurons at the stimulation site by 60%-80% of a voltage gap between the resting